Early Journal Content on JSTOR, Free to Anyone in the World

This article is one of nearly 500,000 scholarly works digitized and made freely available to everyone in the world by JSTOR.

Known as the Early Journal Content, this set of works include research articles, news, letters, and other writings published in more than 200 of the oldest leading academic journals. The works date from the mid-seventeenth to the early twentieth centuries.

We encourage people to read and share the Early Journal Content openly and to tell others that this resource exists. People may post this content online or redistribute in any way for non-commercial purposes.

Read more about Early Journal Content at http://about.jstor.org/participate-jstor/individuals/early-journal-content.

JSTOR is a digital library of academic journals, books, and primary source objects. JSTOR helps people discover, use, and build upon a wide range of content through a powerful research and teaching platform, and preserves this content for future generations. JSTOR is part of ITHAKA, a not-for-profit organization that also includes Ithaka S+R and Portico. For more information about JSTOR, please contact support@jstor.org.

exclusively from these expressions and the ratio of the specific heats as determined by the theory of sound, are given. These tables show the mechanical values of the specific heats of air at different constant pressures, and at different constant densities. Taking 1390 as the mechanical equivalent of the thermal unit as determined by Mr. Joule's experiment on the friction of fluids, the authors find, as the mean specific heat of air under constant pressure,

·2390, from 0° to 100° Cent.

·2384, from 0° to 300° Cent.

XII. "Note on Nitro-glycerine." By A. W. Williamson, Ph.D., F.C.S., Professor of Practical Chemistry in University College. Communicated by Dr. Sharpey, Sec. R.S. Received June 15, 1854.

This compound is formed by acting upon glycerine with a mixture, in equal volumes, of concentrated nitric and sulphuric acids, the glycerine being added by a few drops at a time.

It is heavier than water, in which it is slightly soluble, and is soluble in alcohol and in ether.

From its proneness to decomposition in drying, even by the air-pump, a complete analysis could not be made, but a qualitative examination of the relative amounts of carbon and nitrogen gave the following results:—

	1.	2.	3.	4.
Volumes of mixed gases	101	91·5	99	97
Volumes of nitrogen not absorbed by potash	32	30·5	34	33
Carbonic acid absorbed by potash	69	61	65	64

	1.	2.	3.	4.	5.
Mixed gases	178	194	173	194	192
Nitrogen	61	66	58	65	65
CO_2	117	128	115	129	127

From these results the following formula was deduced:—

$$C_6H_8O_6 + 3NO_5 = C_6 \overset{H_5}{3NO_4} O_6 + 3HO.$$

It would therefore appear that 3H are replaced by $3NO_4$.

On boiling this compound with concentrated solution of potash, it is decomposed into glycerine and nitrate of potash.